Last update : 11/07/2002

	Accelerator Phys		Controls		Status	Who	Description
	Time Required thru commiss. (FTE per year)	Time required for ops. Version (FTE per year)					
Application Programming Infrastructure							
Database management	0.25	0.1	0.5	0.5	ongoing		populate database, maintain XML translation, SQL consitency queries, magnet measurement
XAL core developement	2	1.5	0	0	ongoing		develop servers, CA features, models, servers
total base:	2.25	1.6	0.5	0.5			

	Time Required thru commiss (Months)	Time required for ops. Version (months)			Date Needed for commis.	Priority	Status	Who	Description
General Purpose Tools / Displays					Oct-02				
X-Y correlator	2	1	1	1			Version 1, EPICS interface	Chu	Add features as requested (time correlation)
4/3 bump algorithm	1	0						COSY-Lab	
Post-Mortem Buffer Display/Analysis			3	3		1			
BCM Transmission Display			1	0		1	Can use xiodiag		

BLM Loss Display			1	0		1		Otavvio (BNL)	
Wire Scanner Meas/Analysis/Display	3	1				1	EPICS version done	Blockland / Galambos	
Emittance	2	1					MEBT done (Williams)		Used after RFQ, MEBT and DTL tank1 in commisssioning. MEBT only for ops.
Save / restore			1	1					setup BURT for specific applications
TOF	1	0				1			General TOF application for arbitrary BPMs
RF conditioning	1	0				2	Version 1	Gurd	
Automated Steering Polarity/Strengt	1	0				1	Version 1	Pelaia	For linac/transfer line. Maye need separate one for the ring
BPM Offset measurement	1	1				2	Version 1	Pelaia	Beam based alignment for cases with independently adjustable quads
trajectory measurement/correction	2	1				1			Correct trajectory, general purpose
oscilliscope display	2	1					EPICS version done		An oscilliscope like display for array PVs, that refresses up to 60 Hz
Online model								Allen	
xiodiag (general purpose display)							Version 1	Chu	Display signal type values vs. s, heirarchal drill down

MEBT

Orbit Difference	1	1			10/1/02	2	Version 1	Chu	
Quad setting	1	1				1	Matlab version	Alexsandrov	
RF setting	1	1				1	Matlab version	Alexsandrov	
total 10/02	19	9	7	5					

DTL

Item	N1	N2	N3	N4	N5	Date	Owner	Notes
RF setting (delta T method)	2	1				4/1/03	Shihlo	Note: not all phase setting methods may be useful and kept for ops.
RF setting (single phase)	2	1				4/2/03	Shihlo	
RF setting (energy degrader)	2	0				4/3/03	Shihlo	
Aperture	1	0						Scan aperture looking for misalignments
total 7/1/03	**7**	**2**	**0**	**0**				

CCL

Item	N1	N2	N3	N4	N5	Date	Owner	Notes
Transverse Matching	3	1				5/1/2004		Quad value setting for matching
Magnet Standardization Cycle			1	0	1		Sibley	Provide B(I) and turn on procedures
total 5/1/04	**3**	**1**	**1**	**0**				

SCL

Item	N1	N2	N3	N4	N5	Date	Owner	Notes
RF setpoint	2	1				9/1/2004		
Failed cavity	0	6			2			Retune cavities as workaround for non-operable cavity
Linac Energy Knob	1	1						Fine adjustment of linac energy for Ring applications.
Magnet Standardization Cycle			1	0	1		Sibley	Provide B(I) and turn on procedures
total 9/1/04	**3**	**8**	**1**	**0**				

HEBT

Item	N1	N2	N3	N4	N5	Date	Owner	Notes
						12/1/2004		
Achromat horizontal phase advance	1	0			1			Model based quad setting
HEBT Energy Knob	1	0			1			Adjust lattice for energry
Transfer Line emit, beta, alpha meas	1	1			1			Deconvolve twiss from 3 profiles Wiedemann, p.157)
HEBT/Ring Optics Matching and Ad	3	1			2			Use measured upstream twiss, and adjust intermediate quads to get model predicted foil twiss

Transfer Line dispersion measureme	0	1	1			Simple script for commssioning
Absolute TOF Energy Measurement	1	1	1			Assumes signals are avaiable and clean
H,V Bump Control/Meas/Closure	1	0	1			Prebuilt bump applications (control), Automated check that the bump is localized
Beam on Foil Knobs (x,x-prime,y,y-p	1	1	1			Upstream steering settings
Model server for transport lines	12	3				

RING 12/1/2004

Injection Chicane Amplitude	1	0	1			
Dynamic Injection Bump Amplitude	2	1	1			General waveform generator for dynamic bumps.
RING Energy Knob	1	0	1			Set ring magnets for prescribed energy
RING/Transfer Line Optics Model	6	6	1			
Orbit Display	1	1	1			Ring has its own display
Closed-Orbit Correction	2	1	1	Version 1	Pelaia	From simple to complex model based
Energy Calculation from Magnet Set	0.5	0	2			Dipole field
Automated Steering Polarity/Strengt	1	0	1			Different in ring
Tune Measurement	0.5	0.5	1			Diagnostics provides this calculation
Tune Adjustment	1	2	1			Model based, may be offline at first
Dispersion Measurement	1	2	1			Easy (BPM / energy knob)
Chromaticity Measurement	0.5		1			Tune / energy knob
Chromaticity Adjustment	1		2			
Linear Optics Measurement	1		1			
Linear Optics Correction	1		1			
Coupling Measurement	1		2			
Coupling Correction	1		2			
Turn-by-turn BPM Analysis Package	1	3	2			
(Tune, Damping or Growth rates, Phase-Space Motion)						
Set RING Dipole to Hall Probe B-fiel	1	0	1			

Magnet Standardization Cycle			1		1
BIG Kicker Control and BIG Measure	0	3			2
Collimator Foil Controls	1	1			1
Model server for ring	12	6			

total 12/1/04   58.5   34.5   1   0

RTBT   5/1/2005

Ring/RTBT Optics Matching and Adju	3	3	
RTBT Energy Knob	1	0	Adjust magnets for beam energy
Target Position Knobs (x,y)	2	2	

total 5/1/05:   6   5   0   0